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EXAMINER
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ART UNIT	PAPER NUMBER
2662	8

DATE MAILED: 01/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>18-35</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-35</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>9/18/00</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s). _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Priority

1.   Acknowledgment is made of applicant's claim for foreign priority under 35

U.S.C. 119(a)-(d). Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d),

which papers have been placed of record in the file.

Drawings

2.   The drawings are objected to under 37 CFR 1.83(a). The drawings must show every

feature of the invention specified in the claims. Therefore, the first algorithm and the second

algorithm must be shown or the feature canceled from the claims 18 and 35. Also, in the

specification figure 1 is defined as a first part of the algorithm and figure 2 is defined as showing

the second part of the algorithm, also "the algorithm" is used in line 7 of page 7. Clearly, figure

2A, figure 2B, and the specification disclose only a single algorithm and not two algorithms as

claimed. Further, the existing drawings include figure 2A and figure 2B, but there is no

description of each of these drawings in the specification. The specification only includes a

description on a figure 2 that does not exist in the existing drawings that does not allow any

direct correlation between the figure 2 description in the specification and figures 2A and 2B in

the existing drawings. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office

action to avoid abandonment of the application. The objection to the drawings will not be held

in abeyance.

Specification

3.   Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:
(1) if a machine or apparatus, its organization and operation;
(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

4.   The abstract of the disclosure is objected to because the content of a patent abstract does not enable the reader thereof, regardless of his or her degree of familiarity with patent documents, to ascertain quickly the character of the subject matter covered by the technical disclosure and should include that which is new in the art to which the invention pertains. Specifically, the only reference to the new invention is that "the invention solves this problem by defining rules" and is a comparison to prior art PPD that should not be done as cited above. The content should include new items such as the maximum frame size and description of the

algorithms and represent an overview of the invention. Correction is required. See MPEP

§ 608.01(b).

5.   The specification is objected to because it does not provide a full, clear, and concise

written description with exact terms. Regarding exact terms, the examiner does not find exact

definitions in the original specification for the following terms:

- S_PPD_1, in claims 25, 28, 29, and 30

- LPD within the specification.

Also, the examiner does not find a consistent terminology used with the S_XXX_X terms or any

correlation to EPD, PPD, 0, or 1 as shown below.

Variable	S_EPD_0	Fixed Threshold
Constant	S_EPD_1	Fixed Threshold

Constant	S_PPD_0	Fixed Upper Limit
Variable	S_PPD_1	Not in specification

The specification and claims should use consistent terminology to insure clarity, and the

examiner would recommend that these values be consistently called thresholds, and the terms

variable, constant, and fixed be deleted. The examiner interprets that these values are set based

on system, connection, and overload conditions and may be changed over time as these

conditions change.

Claim Objections

6.   Claims 31-35 are objected to because of the following informalities: The preliminary

amendment in line 17 requests that claims 18-30 be substituted for all the original claims that

have been canceled, but claims 18-35 follow this request. The examined believes there is a

typographical error and "30" should be -35-, and the request includes the addition of new claims

31-35. Appropriate correction is required.

7.   Claims 25, 29, and 30 are objected to because of the following informalities: The

examiner believes that there are typographical errors in these claims as follows:

- "S_PPD___1" in line 11 on page 6 in claim 25 should be -S_PPD_1-

- "frames" in line 17 on page 7 in claim 29 should be -cells-

- "S_EPD___0" in line 27 on page 7 in claim 30 should be -S_EPD_0-

- "S_PPD_0 MFS" in line 1 of page 8 in claim 30 should be -S_PPD_0+MFS-

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making
> and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it
> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
> contemplated by the inventor of carrying out his invention.

9.   Claims 25, 28, 29, 30, 33, and 34 are rejected under 35 U.S.C. 112, first paragraph, as

failing to comply with the written description requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to reasonably convey to one skilled

in the relevant art that the inventors, at the time the application was filed, had possession of the

claimed invention. Specifically, the original specification has no definition for the term

S_PPD_1 used in claims 25, 28, 29, and 30. The examiner interprets the _0 and _1 associated

with all such S_XXX_X terms to be CLP = 0 or 1, but this is not explicit in the specification in

the original specification. Further in claim 29 in line 20 on page 7 of the amendment, S_PPD_1

is claimed to be a variable.

10.

11.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12.   Claims 29, 30, 33, and 34 rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

13.   Regarding claim 29, S_PPD_1-1 used in claim renders this claim indefinite because

S_PPD_1 is not defined in the specification as cited above this can be interpreted as a term or as

an equation where the value of S_PPD_1 is reduced by one cell.

14.   Regarding claims 33, and 34, these claims are rejected since they dependent on claim 30.

Claim Rejections - 35 USC § 102

15.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

16.   Claims 18-24, 26, 27, 31,32, and 35 are rejected under 35 U.S.C. 102(e) as being

anticipated by Bonneau et al. (U.S. 6,657,955), hereinafter referred to as Bonneau.

17.   Regarding claims 18 and 35, Bonneau discloses a method for removal of ATM cells from

an ATM communications device see lines 4-23 in column 11, comprising the steps of:

providing a plurality of ATM cells, a plurality of which are in each case assigned to a

common frame and which are stored in connection-specific queues (egress port 19 receives

the packets of the aggregate input stream see figure 2 and lines 35-36 in column 4 where the

packets are ATM cells in AAL5 frames; see line 7 in column 11, and which are stored in

queues 17 of figure 2 where the queues are hierarchically partitioned to have connection-

specific queues at the VC level as shown in figures 4 and 6, and see lines 22-25 in column 7);

providing a first algorithm by means of which, with;

the exception of a first and a last ATM cell in a frame, all newly arriving cells in the frame

are removed (the alternative discard method per PPD in line 21 of column 11 that inherently

has a first algorithm similar to the algorithm disclosed for the second algorithm below);

providing a second algorithm by means of which all the ATM cells in a frame, from a

first cell to a last cell, are removed upon arrival in a queue from the ATM communications

device (the second algorithm that is EPD see line 26 of column 7 and pseudo-code for the per

connection discard where EPD that discards all the cells associated with the AAL5 frame see

lines 17-18 in column 11);

at a start of a transmission process, indicating by a user a maximum number of ATM cells

per frame (at the start of packet, or SOP see line 10 of column 11 indicating a threshold

VCT[i][j] for the maximum number of cells per AAL5 frame see column 8),

and transmitting the ATM cells using said maximum number (forwarding by each queuing

point using VCT[i][j] see lines7-9 in column 5); and

when said maximum number is exceeded, discarding the associated frame or using the first

algorithm (when VCT[i][j] is exceeded discarding the frame per EPD, see pseudo-code

below column 8 or using the alternative first algorithm PPD).

18.   Regarding claim 19, Bonneau discloses the method according to claim 18 and further

discloses wherein a length of the queue is controlled on a connection specific basis (queues are

hierarchically partitioned to have connection-specific queues at the VC level as shown in figures

4 and 6, and see lines 22-25 in column 7).

19.   Regarding claim 20, Bonneau discloses the method according to claim 18 and further

wherein a constant value is used per connection, which is a measure of a maximum frame size of

the connection (value of threshold VCT[i][j]).

20.   Regarding claim 21, Bonneau discloses the method according to claim 18 and further

wherein, per connection, a number of the cells which have arrived for said connection since an

end of the last frame for said connection is stored (VC_count[i][j] see line 30 in column 8 and

pseudo-code below column 8).

21.   Regarding claim 22, Bonneau discloses the method according to claim 18 and further

wherein no high-priority cells are stored for a connection if a length of the queue for said

connection is equal to a value which is independent of said connection and which represents a

measure for a fixed upper limit for the queue (the examiner is interpreting the broad term of

priority to include service class priority or weight see MCR[i][j] in column 8 and lines 14-16 in

column 7 that sets GFR service class priority higher than ABR and UBR, and high-priority cells

are stored when equal to the TVSC[i] threshold value for service class, see column 8).

22.   Regarding claim 23, Bonneau discloses the method according to claim 18 and further

discloses wherein if high-priority frames do not exceed the maximum number of cells per frame

(the examiner is interpreting the broad term of priority to include service class priority or weight

see MCR[i][j] in column 8 and lines 14-16 in column 7 that sets GFR service class priority

higher than ABR and UBR the first algorithm is not used for said frame, and PPD is not used on

high-priority GFR frames when VCT[i][j] is not exceeded).

23.   Regarding claim 24, Bonneau discloses the method according to claim 18 and further

discloses wherein a specific portion of a buffer store is reserved for high-priority cells per

connection, low-priority cells are not given any access to said specific portion of the store (the

examiner is interpreting the broad term of priority to include service class priority or weight see

MCR[i][j] in column 8 and lines 14-16 in column 7 that sets GFR service class priority higher

than ABR and UBR, and separates the store with a portion for ABR and UBR separate portion

for GFR).

24.   Regarding claim 26, Bonneau discloses the method according to claim 18 and further

discloses wherein high priority frames are completely discarded if, on arrival of a first cell of a

connection, less than a maximum number of cells per frame MFS remains in the logic queue for

this connection or the logic queue exceeds a threshold and a status of a buffer store indicates that

high-priority frames should be discarded, where MFS stands for maximum frame size (the

examiner is interpreting the broad term of priority to include service class priority or weight see

MCR[i][j] in column 8 and lines 14-16 in column 7 that sets GFR service class priority higher

than ABR and UBR the first algorithm is not used for said frame, and EPD is used on high-

priority GFR frames when less cells than VCT[i][j] value remain in the queue or when VCT[i][j]

is exceeded).

25.   Regarding claim 27, Bonneau discloses the method according to claim 18 and further

discloses wherein high priority frames are discarded if, on arrival of a cell which is neither a first

nor a last cell in a frame, a logic value queue has at most one free memory location, or if a length

of the logic queue exceeds a connection specific threshold value or if a filling level of a buffer

store indicates that high-priority frames should be rejected, or if the length of the frame is greater

than cells with the maximum number of cells per frame (the examiner is interpreting the broad

term of priority to include service class priority or weight see MCR[i][j] in column 8 and lines

14-16 in column 7 that sets GFR service class priority higher than ABR and UBR the first

algorithm is not used for said frame, and PPD is used on high-priority GFR frames when less

cells than VCT[i][j] value remain in the queue or when VCT[i][j] is exceeded).

26.   Regarding claim 31, Bonneau discloses the method according to claim, 18 and further

discloses wherein if a filling level of a buffer store is low, high-priority frames whose first cell

has been transferred and whose frame length does not exceed the maximum number of cells per

frame are not subjected to the first algorithm (when the filling level of the buffer is low or when

VCs cease transmitting cells high-priority GFR service is not subjected to PPD see lines 30-48 in

column 11).

27.   Regarding claim 32, Bonneau discloses the method according to claim 18 and further

discloses wherein if a filling level of a buffer store is low, low-priority frames whose first cell

has been transferred and whose frame length does not exceed the maximum number of cells per

frame are not subjected to the first algorithm (when the filling level of the buffer is low or when

VCs cease transmitting cells low-priority ABR or UBR service is not subjected to PPD see lines 30-48 in column 11).

28. Claims 18-23, 26, 27, 31, 32, and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Joffe (U.S. 5,901,147), hereinafter referred to as Joffe.

29. Regarding claims 18 and 35, Joffe discloses a method for removal of ATM cells from an ATM communications device (specifically figure 6 on cell discard, and figures 3, 4, 5 other operations for cell reception), comprising the steps of:

providing a plurality of ATM cells, a plurality of which are in each case assigned to a common frame and which are stored in connection-specific queues (see frame based operation, or FBOM in lines 48-67 on ATM AAL5 frames which are stored in per-VC queuing see line 30 in column 3 and figure 1);

providing a first algorithm by means of which, with;

the exception of a first and a last ATM cell in a frame, all newly arriving cells in the frame are removed (a first algorithm of PPD see lines 62-68 in column 14);

providing a second algorithm by means of which all the ATM cells in a frame, from a first cell to a last cell, are removed upon arrival in a queue from the ATM communications device (a second algorithm EPD see line14 in column 12, Appendix 1, and Appendix 6;

at a start of a transmission process, indicating by a user a maximum number of ATM cells per frame (see marking threshold in item 1 and queue limit in item 2b in column 12 that set a maximum number of cells for FBOM mode for ATM AAL5 frames),

and transmitting the ATM cells using said maximum number (transmitting using the marking

threshold and queue limit); and

when said maximum number is exceeded, discarding the associated frame or using the first

algorithm (when the value of the marking threshold and queue limit is exceeded discarding

per PPD or EPD).

30.   Regarding claim 19, Joffe discloses the method according to claim 18 and further

discloses wherein a length of the queue is controlled on a connection specific basis (see per-VC

queuing in line 30 in column 3, and figure 1).

31.   Regarding claim 20, Joffe discloses the method according to claim 18 and further

discloses wherein a constant value is used per connection, which is a measure of a maximum

frame size of the connection (the marking threshold and queue limit per each input VC or IVC).

32.   Regarding claim 21, Joffe discloses the method according to claim 18 and further

discloses wherein, per connection, a number of the cells which have arrived for said connection

since an end of the last frame for said connection is stored (ENCT see Appendix 2).

33.   Regarding claim 22, Joffe discloses the method according to claim 18 and further

discloses wherein no high-priority cells are stored for a connection if a length of the queue for

said connection is equal to a value which is independent of said connection and which represents

a measure for a fixed upper limit for the queue (no CLP-0 cells are stored if the memory value at

step 1270 or the class value at step 1274 of figure 6 are equaled where these values are

independent of the connection IVC value instep 1286).

34.   Regarding claim 23, Joffe discloses the method according to claim 18 and further

discloses wherein if high-priority frames do not exceed the maximum number of cells per frame,

the first algorithm is not used for said frame (CLP=0 frames that do not exceed IVC queue at step 1286 of figure 6).

35.   Regarding claim 26, Joffe discloses the method according to claim 18 and further discloses wherein high priority frames are completely discarded if, on arrival of a first cell of a connection, less than a maximum number of cells per frame MFS remains in the logic queue for this connection or the logic queue exceeds a threshold and a status of a buffer store indicates that high-priority frames should be discarded, where MFS stands for maximum frame size (incoming CLP=0 frames are completely discarded when the EPD method is in the frame discard state and yes is decided at step 1280 of figure 6).

36.   Regarding claim 27, Joffe discloses the method according to claim 18 and further discloses wherein high priority frames are discarded if, on arrival of a cell which is neither a first nor a last cell in a frame, a logic value queue has at most one free memory location, or if a length of the logic queue exceeds a connection specific threshold value or if a filling level of a buffer store indicates that high-priority frames should be rejected, or if the length of the frame is greater than cells with the maximum number of cells per frame (incoming CLP=0 frames are discarded at step 1276 if the marking threshold is exceeded).

37.   Regarding claim 31, Joffe discloses the method according to claim, 18 and further discloses wherein if a filling level of a buffer store is low, high-priority frames whose first cell has been transferred and whose frame length does not exceed the maximum number of cells per frame are not subjected to the first algorithm (if the buffer stores are low incoming CLP=0 frames not in the state of frame discard or tail discard will not be subject to PPD and be received at step 1283 of figure 6).

38.   Regarding claim 32, Joffe discloses the method according to claim 18 and further

discloses wherein if a filling level of a buffer store is low, low-priority frames whose first cell

has been transferred and whose frame length does not exceed the maximum number of cells per

frame are not subjected to the first algorithm (if the buffer stores are low incoming CLP=1

frames not in the state of frame discard or tail discard will not be subject to PPD and be received

at step 1283 of figure 6).

                              Claim Rejections - 35 USC § 103

39.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
>
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
>
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
>
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
>
> manner in which the invention was made.

40.   Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Joffe as applied

to claim 18 above, and further in view of Bonneau.

41.   Regarding claim 24, Joffe teaches the method according to claim 18, and further teaches

high-priority (CLP=0) and low-priority (CLP=1), but fails to teach wherein a specific portion of

a buffer store is reserved for high-priority cells per connection, low-priority cells are not given

any access to said specific portion of the store. Bonneau teaches a buffer store that reserves a

specific portion for a high priority service class for GFR and a portion for a low-priority service

class such as ABR and UBR, and low-priority service class cells are not given any access to high-priority service class portion. Modifying Joffe's method with the teaching of Bonneau by structuring the buffer store to have separate specific portions for CLP=0 and CLP=0 cells would have arrived at the claimed invention. One of ordinary skill in the art at the time the invention was made would have been motivated to make this modification in order to physically separate CLP=0 and CLP=1 cells and eliminate the need for any software operation and also avoid potential software problems.

Allowable Subject Matter

42.   Claims 25, 28, 29, and 30 would be allowable if rewritten to overcome the rejections under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

43.   Claims 33, and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

1.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

   1) Bonneau (U.S. 6,671,258), Dynamic buffering system having integrated random early detection.

2) Bonneau (U.S. 6,529,474), Shaping algorithm.

3) Pillar et al. (U.S. 6,625,120), Method and apparatus for auto detection of AAL5 type frames for VCC and VPP switches.

4) Joffe et al. (U.S. 6,128,278), Cell queuing in ATM switches.

5) Joffe (U.S. 5,936,959), Cell routing in ATM networks.

6) Miles (U.S. 6,463,476), Controlling congestion in an ATM mode.

7) Siu (U.S. 6,246,687), Network switching system supporting guaranteed data rates.

8) Kozaki et al. (U.S. 5,838,677), Switching system having means for control by monitoring packets in a shared buffer and by suppressing the reading of packets from input buffers.

9) Calvignac et al. (U.S. 6,044,079), Statistical packet discard).

10) Divivier et al. (U.S. 6,618,382), Auto early packet discard (EPD) mechanism for automatically enabling EPD on an Asynchronous Transfer Mode (ATM) network.

11) Yin (U.S. 6,219,728), Method and apparatus for allocating shared memory resources among a plurality of queues each having a threshold value therefor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael I McLoughlin whose telephone number is 703-308-7911. The examiner can normally be reached on weekdays 7AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 703-305-4744. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is 703-305-4700.

mjm

January 9, 2004

HASSAN KIZOU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600